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<input type="checkbox"/>	L16	L14 and l9 and (email and header)	26
<input type="checkbox"/>	L15	L14 and l9	26
<input type="checkbox"/>	L14	L13 and l1	48
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<input type="checkbox"/>	L11	check\$4 same (size or memory)	66058
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<input type="checkbox"/>	L5	L4 and l1	2850
<input type="checkbox"/>	L4	L3 and l2	2850
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<input type="checkbox"/>	L1	network and internet	35617

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Search Results - Record(s) 1 through 26 of 26 returned.

1. Document ID: US 6680922 B1

L16: Entry 1 of 26

File: USPT

Jan 20, 2004

US-PAT-NO: 6680922

DOCUMENT-IDENTIFIER: US 6680922 B1

TITLE: Method for the recognition and operation of virtual private networks (VPNs) over a wireless point to multi-point (PtMP) transmission system

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KMC](#) [Drawn D](#)

2. Document ID: US 6640248 B1

L16: Entry 2 of 26

File: USPT

Oct 28, 2003

US-PAT-NO: 6640248

DOCUMENT-IDENTIFIER: US 6640248 B1

TITLE: Application-aware, quality of service (QoS) sensitive, media access control (MAC) layer

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KMC](#) [Drawn D](#)

3. Document ID: US 6628629 B1

L16: Entry 3 of 26

File: USPT

Sep 30, 2003

US-PAT-NO: 6628629

DOCUMENT-IDENTIFIER: US 6628629 B1

TITLE: Reservation based prioritization method for wireless transmission of latency and jitter sensitive IP-flows in a wireless point to multi-point transmission system

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KMC](#) [Drawn D](#)

4. Document ID: US 6594246 B1

L16: Entry 4 of 26

File: USPT

Jul 15, 2003

US-PAT-NO: 6594246
DOCUMENT-IDENTIFIER: US 6594246 B1

TITLE: IP-flow identification in a wireless point to multi-point transmission system

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn De](#)

5. Document ID: US 6591306 B1

L16: Entry 5 of 26

File: USPT

Jul 8, 2003

US-PAT-NO: 6591306
DOCUMENT-IDENTIFIER: US 6591306 B1

TITLE: IP network access for portable devices

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn De](#)

6. Document ID: US 6590885 B1

L16: Entry 6 of 26

File: USPT

Jul 8, 2003

US-PAT-NO: 6590885
DOCUMENT-IDENTIFIER: US 6590885 B1

TITLE: IP-flow characterization in a wireless point to multi-point (PTMP) transmission system

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn De](#)

7. Document ID: US 6590588 B2

L16: Entry 7 of 26

File: USPT

Jul 8, 2003

US-PAT-NO: 6590588
DOCUMENT-IDENTIFIER: US 6590588 B2

TITLE: Wireless, radio-frequency communications using a handheld computer

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn De](#)

8. Document ID: US 6571285 B1

L16: Entry 8 of 26

File: USPT

May 27, 2003

US-PAT-NO: 6571285
DOCUMENT-IDENTIFIER: US 6571285 B1

TITLE: Providing an integrated service assurance environment for a network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMNC	Drawn De
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9. Document ID: US 6498791 B2

L16: Entry 9 of 26

File: USPT

Dec 24, 2002

US-PAT-NO: 6498791

DOCUMENT-IDENTIFIER: US 6498791 B2

TITLE: Systems and methods for multiple mode voice and data communications using intelligently bridged TDM and packet buses and methods for performing telephony and data functions using the same

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMNC	Drawn De
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10. Document ID: US 6452915 B1

L16: Entry 10 of 26

File: USPT

Sep 17, 2002

US-PAT-NO: 6452915

DOCUMENT-IDENTIFIER: US 6452915 B1

TITLE: IP-flow classification in a wireless point to multi-point (PTMP) transmission system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMNC	Drawn De
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11. Document ID: US 6438594 B1

L16: Entry 11 of 26

File: USPT

Aug 20, 2002

US-PAT-NO: 6438594

DOCUMENT-IDENTIFIER: US 6438594 B1

TITLE: Delivering service to a client via a locally addressable interface

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMNC	Drawn De
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12. Document ID: US 6434568 B1

L16: Entry 12 of 26

File: USPT

Aug 13, 2002

US-PAT-NO: 6434568

DOCUMENT-IDENTIFIER: US 6434568 B1

TITLE: Information services patterns in a netcentric environment

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMNC	Drawn De
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 13. Document ID: US 6397259 B1

L16: Entry 13 of 26

File: USPT

May 28, 2002

US-PAT-NO: 6397259

DOCUMENT-IDENTIFIER: US 6397259 B1

TITLE: Method, system and apparatus for packet minimized communications

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMPC	Drawn De
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 14. Document ID: US 6363411 B1

L16: Entry 14 of 26

File: USPT

Mar 26, 2002

US-PAT-NO: 6363411

DOCUMENT-IDENTIFIER: US 6363411 B1

TITLE: Intelligent network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMPC	Drawn De
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 15. Document ID: US 6354748 B1

L16: Entry 15 of 26

File: USPT

Mar 12, 2002

US-PAT-NO: 6354748

DOCUMENT-IDENTIFIER: US 6354748 B1

TITLE: Playing audio files at high priority

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMPC	Drawn De
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 16. Document ID: US 6335927 B1

L16: Entry 16 of 26

File: USPT

Jan 1, 2002

US-PAT-NO: 6335927

DOCUMENT-IDENTIFIER: US 6335927 B1

TITLE: System and method for providing requested quality of service in a hybrid network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMPC	Drawn De
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 17. Document ID: US 6253326 B1

L16: Entry 17 of 26

File: USPT

Jun 26, 2001

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Results Key:

JNL = Journal or Magazine **CNF** = Conference **STD** = Standard

1 Ebus - a sensor bus based on the SPI serial interface

Wobschall, D.; Prasad, H.S.;

Sensors, 2002. Proceedings of IEEE , Volume: 2 , 12-14 June 2002

Pages:1516 - 1519 vol.2

[\[Abstract\]](#) [\[PDF Full-Text \(433 KB\)\]](#) **IEEE CNF**

2 IPsec overhead in wireline and wireless networks for Web and email applications

Hadjichristofi, G.C.; Davis, N.J., IV; Midkiff, S.F.;

Performance, Computing, and Communications Conference, 2003. Conference Proceedings of the 2003 IEEE International , 9-11 April 2003

Pages:543 - 547

[\[Abstract\]](#) [\[PDF Full-Text \(527 KB\)\]](#) **IEEE CNF**

3 Secure Electronic Post Office

Ming-I Hsieh; Hsia O-Kuang Wu;

Security Technology, 2000. Proceedings. IEEE 34th Annual 2000 International Carnahan Conference on , 23-25 Oct. 2000

Pages:251 - 256

[\[Abstract\]](#) [\[PDF Full-Text \(576 KB\)\]](#) **IEEE CNF**

4 Communications support for EDI

Debenham, M.J.;

Standards and Practices in Electronic Data Interchange, IEE Colloquium on , 2 May 1991

Pages:8/1 - 8/3

[Abstract] [PDF Full-Text (188 KB)] IEE CNF

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First Hit Fwd Refs

L10: Entry 6 of 10

File: USPT

Jan 23, 2001

DOCUMENT-IDENTIFIER: US 6178331 B1

TITLE: System and process for allowing wireless messaging

Abstract Text (1):

The present invention provides a bi-directional (and/or unidirectional) multiplexing messaging gateway for wireless devices, such as for devices using the Global System for Mobile Communication (GSM) wireless digital standard, or any other suitable protocols. Electronic messages may be transmitted over a wireless connection to, or to and from, a mobile phone, and the present invention maintains and facilitates all necessary housekeeping functions. For example, electronic messages addressed to a mobile phone may be received by the gateway of the present invention from the Internet, a LAN, or any other source, and routed to the appropriate mobile phone. Such electronic messages may be originated manually or may be automatically generated by specific computer applications, such as a scheduling program operating on a LAN. Likewise, the user of the mobile phone may reply to the sender of the original electronic message, whereby the gateway of the present invention maintains the address of the sender and matches it with the reply so as to facilitate the forwarding of the reply to the correct address. Finally, the user of the mobile phone may cause an electronic message received from a sender to be remotely routed to, for example, a chosen facsimile machine, or any other suitable destination.

Brief Summary Text (5):

Short Message Services are provided by operators of wireless communication systems today who have digital service available. Short Message Services, or more simply put "SMS", are messages delivered by the wireless network to a digital phone. There are three major digital standards commonly deployed throughout the US today; Code Division Multiple Access ("CDMA"), Time Division Multiple Access ("TDMA"), and Global Systems for Mobile ("GSM").

Brief Summary Text (6):

Global Systems for Mobile ("GSM") is a specification that was written to provide a unified digital platform that all 12 countries of the European Community ("EC") could use from one country to the next with the same phone. Other countries outside of the EC have adopted GSM as their preferred system specification increasing the volume of systems worldwide. The first systems went commercial in 1993 in Europe, while the first commercial GSM system in the United States went commercial at the end of 1995.

Brief Summary Text (7):

GSM is similar to IS-54 TDMA (see below) in that it uses FDMA to separate RF carriers and TDMA to serve up to 8 users per channel. It was developed to provide a single European standard and to facilitate many new enhanced services and automatic roaming. Initially, GSM used the 900 Mhz band but has now added two compatible standards: DCS1800 at 1.8 Ghz and PCS1900 at 1.9 Ghz. TDMA (or D-AMPS) began life as a digital upgrade to the 800 Mhz AMPS network and is commonly referred to as IS-54. It employs the 30 kHz AMPS channel split into three timeslots with a separate control channel. The standard was upgraded to IS-136 to include an integrated digital control channel and interband operability to 1900 Mhz. CDMA was developed to provide further capacity enhancements over the TDMA standards. It uses Direct

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Sequence Code Division Multiple Access to differentiate users on the same 1.28 Mhz frequency band. CDMA systems are currently operating at 800 Mhz and 1900 MHz.

Brief Summary Text (10):

The present invention provides a bi-directional (and/or unidirectional) multiplexing messaging gateway for wireless devices, such as for cellular devices using the Global System for Mobile Communication (GSM) wireless digital standard, or any other suitable protocols. Electronic messages may be transmitted over a wireless connection to, or to and from, a mobile phone, and the present invention maintains and facilitates all necessary housekeeping functions. For example, electronic messages addressed to a mobile phone may be received by the gateway of the present invention from the Internet, a LAN, or any other source, and routed to the appropriate mobile phone. Such electronic messages may be originated manually or may be automatically generated by specific computer applications, such as a scheduling program operating on a LAN. Likewise, the user of the mobile phone may reply to the sender of the original electronic message, whereby the gateway of the present invention maintains the address of the sender and matches it with the reply so as to facilitate the forwarding of the reply to the correct address. Finally, the user of the mobile phone may cause an electronic message received from a sender to be remotely routed to, for example, a chosen facsimile machine, or any other suitable destination.

Detailed Description Text (4):

In one embodiment, the present invention may be implemented as a Unix-based messaging gateway for Global System for Mobile Communications ("GSM") network operators. Of course, any other suitable communication protocol may be used as well, such as Code Division Multiple Access ("CDMA"), Time Division Multiple Access ("TDMA"), or the like. FIG. 1 depicts an overall functional diagram showing the main components that may be utilized in implementing the present invention.

Detailed Description Text (5):

With reference to FIG. 1, an overall configuration 100 is shown. The network operator components 110 may include a standard Short Message Service Center (SMSC) 102 module as well as a switch 103 for communicating to and from the transmission towers 131, and hence the mobile phones 130. The functionality performed by the present invention may be included within the gateway 101, which may also form part of the network operator components 110.

Detailed Description Text (7):

The gateway 101 may be connected to the Internet 140 (and/or other equivalent public or private data network) via line 141, which in one embodiment may comprise a DDS leased line, a standard telephone line, or equivalent, using any type of transport protocol (e.g., TCP/IP, etc.). The gateway 101 may also be connected to a local area network (LAN) 120 via an X.25 dedicated circuit, a dial-up TCP/IP connection, or the like (161), using any type of transport and connection protocol, such as generic bulletin message protocol (GMP), telelocator application protocol (TAP), SMTP, etc. The gateway 101 may be connected to the LAN 120 via an access server 125, which will be described in further detail later.

Detailed Description Text (10):

1. Manager 202. Provides database connectivity, message queue management, billing interface, and client authentication.

Detailed Description Text (11):

2. SMS 203. Manages interaction with the SMSC 102 via a communications protocol (e.g. SMPP for Aldiscon SMS systems, over the X.25 or TCP/IP transport protocol).

Detailed Description Text (14):

1. SMTP Interface 204A. This service provides the core client message submission services. All client and Internet mail (e.g., from the Internet 140, LAN 120, etc.)

eventually use this service to submit messages to the messaging kernel 200.

Detailed Description Text (15):

2. TAP / PET Interface 204B. This service provides a pager protocol interface for message submission, allowing paging terminals, and switches to send to GSM mobile phones 130.

Detailed Description Text (16):

3. POP3 Interface. Although not specifically shown in FIG. 2, POP3 is a protocol component of Internet mail, and is used by clients to retrieve Internet mail from a Server. This service is used by the LAN access server 125 for message retrieval.

Detailed Description Text (17):

4. Internet Mail Interface 204C. This service allows normal Internet e-mail (from 140) to be forwarded to, for example, a digital mobile phone 130, and allows for messages to be composed and sent from a mobile phone 130 to the Internet.

Detailed Description Text (18):

5. X.25 Conversion Interface. In one embodiment of the present invention, there are two available transmission layers supported: x.25 and TCP/IP. While the TCP option is primarily referred to in the present specification, it will be understood that X.25 may be used as well. The X.25 service provides a translation layer to allow incoming X.25 based connections to use the TAP, SMTP and POP3 facilities provided by the other subsystems.

Detailed Description Text (22):

Database Services 303. This service provides the interface layer for the external datastore 304. This is accomplished using a library of embedded SQL, such as those provided by Rogue Wave Inc. All access to database objects is via the Rogue Wave Library.

Detailed Description Text (23):

Oracle Database 304. An Oracle Workgroup database is used for all datastore, including short term queues and long term message store. Access is achieved via embedded SQL calls.

Detailed Description Text (25):

LAN Services 306. This service provides the interface layer between the manager 202 and the POP3 server 204C. The POP3 server is used by the LAN access server 125 to retrieve messages from the mobile phone 130 destined for the LAN clients 121.

Detailed Description Text (26):

Sendmail Services 307. This service provides the interface layer between the sendmail application that is used to send Internet emails from the gateway 101, and the manager process 202.

Detailed Description Text (30):

One important feature of the gateway system 101 is its ability to route messages both from the LAN 120 and/or the Internet 140 to the mobile phone 130, and from the mobile phone 130, back to the LAN 120 or Internet 140 again. To accomplish this, the gateway 101 uses the concept of addressing schemes. Addressing schemes are used to resolve the inherent differences in the addressing between computer based mail systems, and mobile phones.

Detailed Description Text (31):

On a computer mail system (e.g., on LAN 120), individual users 121 are assigned an identifier (usually their name and home domain) which other clients 121 can use to send mail to them. Mobile phones 130 however only use numbers to identify other phone users. To simplify sending messages between mail clients 121 and mobile phones 130, the gateway 101 of the present invention can use a number of addressing

schemes and methods to determine the recipient.

Detailed Description Text (32):

Messages sent from a computer based mail system to a mobile phone 130 require a valid MSISDN (mobile phone number), and the UNIX domain name where the gateway 101 resides. For example, a valid MSISDN/domain name address might be "[Error! Bookmark not defined.] 6421200300@sms.domain.com", where the number "6421200300" identifies the MSISDN, and "sms.domain.com" identifies the Unix domain name of the gateway 101.

Detailed Description Text (33):

However, according to the teachings of the present invention, messages sent from a mobile phone to a destination (LAN 120, Internet 140, etc.) may be addressed using a number of different methods. When a message is sent from an outside e-mail source to a mobile phone 130, the gateway 101 may create a new, temporary and unique reply MSISDN number associated with the reply address, before sending the message and the reply MSISDN number onto the mobile phone 130. If the user of the mobile phone 130 replies to this message, the reply MSISDN number is sent with the reply message back to the gateway 101, which the gateway 101 can map back onto the e-mail address of the original sender--either an Internet mail address or some other type of client ID. Thus, the user of the mobile phone 130 can reply to messages without knowing the address of the original sender--the gateway 101 performs all necessary mapping.

Detailed Description Text (34):

For messages originating from the mobile phone 130, and not using the reply function, there are two methods available for determining delivery. If the message is destined for the Internet 140, the full Internet address of the recipient may be specified in the body of the message. The mobile phone 130 then transmits the message to the gateway 101 using a selected Internet mail relay MSISDN, which is a special number for Internet mail only. The gateway 101 is configured such that any message sent to this MSISDN number will be forwarded to the Internet 140, and delivered to the recipient address specified in the body of the message.

Detailed Description Text (35):

Messages destined for a client 121 using the server 125 have two additional addressing options available to them. These options include two addressing schemes called number map addressing and number name map addressing. For corporate LAN e-mail systems, number map addressing requires a permanent MSISDN number be setup for each individual client 121 configured on the system 120. The system administrator for the system 120 assigns an additional 2 to 4 digit default ID that is tagged onto the permanent MSISDN when messages are sent. These number ranges are used to identify the destination client 121 to receive the message. Only a portion of the overall number is used--the remainder is used by the client 121 to identify the individual user within the client mail system 120. For example, if the Gateway client ID prefix is "642100200", and the client mail user default ID is "01", then the full originating address would be "6410020001"--this address is what would be used to reply to messages, and to originate mobile phone based messages to the client mail system.

Detailed Description Text (36):

For Internet e-mail and number map addressing, incoming Internet messages may be assigned MSISDN numbers on an ad-hoc basis from a pool of available numbers. This temporary MSISDN is stored with the source address of the Internet mail, and is used if the message is replied to. All numbers in this temporary MSISDN pool may be reused in oldest first date order. For example, suppose a message comes in from the Internet to a mobile number "6421605600". It may be addressed as "642160500@sms.bulletin.net" from "anyperson@anothercompany.com". The gateway 101 assigns a new temporary MSISDN for the life of the message (e.g., "64210010011234") and saves the originating address with this temporary MSISDN. When a reply from the

mobile phone comes back, the destination address "6421001001234" is matched to the Internet address of the original message sender. This address ("[Error! Bookmark not defined.] anyperson@anothercompanycom") is then used to transmit the message reply.

Detailed Description Text (37):

Using the number name map addressing scheme with the server 125 only requires the Gateway client ID prefix to be used when transmitting the message from the mobile phone 130. This will identify the client 121 to receive the message. Using an "aliasing facility" in the access server 125 (described in further detail later), the client 121 can then use a simple address like John, or 123 in the body of the message to identity the intended recipient. For example, if the gateway client ID prefix is "642100200" and the LAN mail user is "johnsmith", the message would be received on the mobile phone 130 as from "johnsmith". Messages sent to the LAN 120 from the mobile phone 130 would have to be addressed as "TO johnsmith <message body>" and "+642100200" entered as the destination phone number, when requested by the phone.

Detailed Description Text (38):

Using the number name map scheme with the Internet 140 requires the mobile phone user 130 to address the Internet destined message in the body of the message to identity the intended recipient. Once the message is address to the intended recipient, the message is sent to a predefined, and known MSISDN. This number is referred to as a relay number. Messages to this number are checked by the gateway 101 and the destination address is obtained from the body of the message. Given that some mobile phones 130 cannot produce the @ character, substitutes like * and \$ can be used. As an example, suppose the Gateway Internet mail relay number is "6421900900" and the Internet mail destination is "[Error! Bookmark not defined.] johnsmith@somecompany.com". The message would be received from the mobile addressed to the MSISDN "6421900900". The body of the message would contain the address "johnsmith*somecompany.com".

Detailed Description Text (55):

The manager server 202 implements the object interfaces for the message, queue, billing, MSISDN objects. These objects manage all interfaces to the database. All objects in this server process are multi-threaded, with one thread per object instantiation. All objects are generally one instantiation.

Detailed Description Text (83):

The parameter object maintains the central gateway database of preferences and options. Each object can request the value for a parameter or update its value. The parameter object is also responsible for loading and saving this file. Each individual parameter is stored in the form of a key and value pair. String, numeric, and boolean value types may be supported. The parameter object is defined below in Table 17.

Detailed Description Text (85):

The address resolver object takes care of the details of mapping Internet addresses to MSISDN based addresses, as described elsewhere. This mapping is handled by association objects, and the general store object. The address resolver is passed incorrectly addressed messages from the router object. The resolver then either looks up the correct destination address for the destination type (mobile network or Internet) or creates a new mapping for new messages.

Detailed Description Text (86):

The address resolver object has an address range that is used to assign temporary MSISDN-based addresses to outbound Internet messages. This address acts as a source address to the mobile network, and provides a way for the router to find the correct source address if the message is replied to. Source MSISDN addresses, created in real time in this manner, live only as long as it takes to cycle through

the complete range of available addresses.

Detailed Description Text (87):

All incoming messages from the mobile network are routed through a requester object. The destination and contents of the message are inspected and compared to a list of delivery services. Delivery services are keyed to a specific 'known' destination address, or to specific instructions contained in the body of the message. For messages sent to a known address, the complete message is forwarded to that service for delivery. Messages containing instructions usually relate to another message, and this second message can be found based on the destination address of the mobile message using the address resolvers source address method. Once this second message is retrieved, the request action can be carried out by the delivery service.

Detailed Description Text (93):

The smtp object 204A (FIGS. 2-3) implements the object interfaces for the SMTP receiver object 305. This object implements the SMTP protocol for external message submission by Internet mail compatible systems.

Detailed Description Text (94):

In the SMTP object 305 is implemented a full server side version of the SMTP protocol as defined in the Internet RFC 821 and succeeding standards documents. This server object is used by both the access server 125 (FIG. 1) and any Internet mail clients for message submission.

Detailed Description Text (95):

Each individual message is validated against the MSISDN database for authority to send, resource limits etc. Therefore as each message is received from the SMTP client, a request to the manager server 202 for the MSISDN verification for that message must be received and checked before any acknowledgment can be sent back to the SMTP client. The MSISDN to be checked is obtained in the RCPT TO: field where the destination will be in the form of "RCPT TO: someuser@somedomain.com". Invalid MSISDN message should be rejected during the SMTP transaction. Accepted messages are then passed to the manager object 202 for transmission.

Detailed Description Text (96):

Internet mail extension headers, referred to as X headers, are used to control certain message properties. Properties controlled by the x headers are Priority, message lifetime or validity, and the billing method to be used. An additional 'service provider' x header is used to identify clients with special privileges or rights.

Detailed Description Text (98):

The mail object implements the object interfaces for the POP3 transmitter object (described elsewhere). This object implements the POP3 protocol for external message reception by any Internet mail compatible system.

Detailed Description Text (102):

The aim object implements the object interfaces for a generic TCP/IP based protocol for advanced message submission and reception by external applications. The aim object responds to incoming TCP requests on an assigned port. Using the INET service daemon, incoming calls cause the INET daemon to start this process. The object implements a generic 3 phase protocol (bind, transaction, terminate), that perform the same functionality as the SMTP and POP3 protocols combined. Each packet consists of a header and data. Each connecting host must be authenticated in a similar manner to the POP3 authentication--that is MSISDN/password. Once authenticated, the client can proceed with message submission until either side terminates the session. The Aim object will generally only terminate a session if resource limits are exceeded or if a system outage occurs.

Detailed Description Text (105):

With the tap object, each individual message is validated against the MSISDN database for authority to send, resource limits etc. Therefore as each message is received from the SMTP client, a request to the manager server 202 for the MSISDN profile object for that message must be received and checked before any acknowledgment can be sent back to the TAP client. The MSISDN to be check is obtained from the message destination field. Invalid MSISDN message should be rejected during the transaction. Accepted messages are then passed to the router object for transmission.

Detailed Description Text (125):

[604-607] manager::Qmanager adds the message to the waiting queue, if it is not already present. If there are less than the message queue cache size, the message is added to the queue cache for the transmitter object. manager::Qmanager cycles throughout the various queue caches for each queue.

Detailed Description Text (167):

As described previously with respect to FIG. 1, the LAN access server 125 of the present invention provides for the transparent forwarding of e-mail from a client 121 on a LAN 120 to a mobile phone 130 (e.g., a PCS mobile phone) via the gateway 101. Additionally, as a further feature of the present invention, the LAN access server 125 may also interface to, for example, an appointment and task management system (such as Microsoft Scheduler+, or the like) operating on the server 125, LAN 120 and client 121, to provide automatic forwarding of appointment reminders, task reminders, etc., to a mobile phone 130.

Detailed Description Text (169):

With reference to FIG. 1, in one embodiment, the access server 125 and clients 121 operate as three general components in a client/server architecture. The basic components include the access server 125 itself, as well as a client administration tool that operates on a client 121 and a server administration tool that operates on the access server 125. The server 125 and clients 121 may communicate with one another via RPC calls over the LAN 120, such as through the TCP/IP protocol, or any other suitable protocol.

Detailed Description Text (170):

FIGS. 12-21 are flow diagrams depicting the various steps performed by the LAN Access Server 125 in order to process mail between one or more clients 121 of the network 120 and one or more phones 130, through the intervening components (gateway 101, SMSC 102, switch 103, etc.). These figures are described in detail below, and again the reference numerals shown below in [brackets] correspond to the associated reference numerals in the figures.

Detailed Description Text (173):

[1202] Backup user database, forward e-mails, and contact Gateway 101. This is a main "artery" of the system (farther details in FIG. 14).

Detailed Description Text (185):

[1402] If low, show a suitable warning and put the program in standby mode.

Detailed Description Text (186):

[1403] Check if it is time to back up the user database.

Detailed Description Text (187):

[1404] If so, send a Windows message to Mail Processing Thread to back up the user database.

Detailed Description Text (209):

[1701] Get the user database and take the first user.

Detailed Description Paragraph Table (5):

TABLE 5 Message Object Object Attributes Source Address: Full Internet address of sender. Destination Address: MSISDN of destination. Message Text: Contents of the message. Priority: An integer value indicating the priority of the message.

DateTime: When the message was received by Bulletin Gateway. Validity: How long before the message expires. Status: Message status information. Bill Rating: The billing method to be applied to this message. Object Methods Get/Set Methods for all attributes.

CLAIMS:

1. An electronic message forwarding system comprising:

(a) a wireless communication device;

(b) means for storing a database of records, each record including an associated date and time;

(c) means for periodically polling the records in the database, wherein the current date and time is compared with the date and time stored in the database for each record;

(c) means for forwarding an electronic message corresponding to a selected record of the database to the wireless communication device, if the date and time associated with the selected record matches the current date and time, according to pre-selected criteria.

5. The system of claim 1, wherein the database of records is associated with an appointment and task scheduler.

6. An electronic message forwarding process for use with a wireless communication device, comprising the steps of:

(a) storing a database of records, each record including an associated date and time;

(b) periodically polling the records in the database, wherein the current date and time is compared with the date and time stored in the database for each record;

(c) forwarding an electronic message corresponding to a selected record of the database to the wireless communication device, if the date and time associated with the selected record matches the current date and time, according to pre-selected criteria.

US-PAT-NO: 6253326
DOCUMENT-IDENTIFIER: US 6253326 B1

TITLE: Method and system for secure communications

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMD](#) | [Drawn De](#)

18. Document ID: US 6202060 B1

L16: Entry 18 of 26

File: USPT

Mar 13, 2001

US-PAT-NO: 6202060
DOCUMENT-IDENTIFIER: US 6202060 B1

TITLE: Data management system

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMD](#) | [Drawn De](#)

19. Document ID: US 6157935 A

L16: Entry 19 of 26

File: USPT

Dec 5, 2000

US-PAT-NO: 6157935
DOCUMENT-IDENTIFIER: US 6157935 A

TITLE: Remote data access and management system

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMD](#) | [Drawn De](#)

20. Document ID: US 6119167 A

L16: Entry 20 of 26

File: USPT

Sep 12, 2000

US-PAT-NO: 6119167
DOCUMENT-IDENTIFIER: US 6119167 A

TITLE: Pushing and pulling data in networks

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMD](#) | [Drawn De](#)

21. Document ID: US 5999525 A

L16: Entry 21 of 26

File: USPT

Dec 7, 1999

US-PAT-NO: 5999525
DOCUMENT-IDENTIFIER: US 5999525 A

TITLE: Method for video telephony over a hybrid network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Drawn De
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22. Document ID: US 5867495 A

L16: Entry 22 of 26

File: USPT

Feb 2, 1999

US-PAT-NO: 5867495

DOCUMENT-IDENTIFIER: US 5867495 A

TITLE: System, method and article of manufacture for communications utilizing calling, plans in a hybrid network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Drawn De
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23. Document ID: US 5867494 A

L16: Entry 23 of 26

File: USPT

Feb 2, 1999

US-PAT-NO: 5867494

DOCUMENT-IDENTIFIER: US 5867494 A

TITLE: System, method and article of manufacture with integrated video conferencing billing in a communication system architecture

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Drawn De
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24. Document ID: US 5859979 A

L16: Entry 24 of 26

File: USPT

Jan 12, 1999

US-PAT-NO: 5859979

DOCUMENT-IDENTIFIER: US 5859979 A

TITLE: System for negotiating conferencing capabilities by selecting a subset of a non-unique set of conferencing capabilities to specify a unique set of conferencing capabilities

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Drawn De
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25. Document ID: US 5794018 A

L16: Entry 25 of 26

File: USPT

Aug 11, 1998

US-PAT-NO: 5794018

DOCUMENT-IDENTIFIER: US 5794018 A

TITLE: System and method for synchronizing data streams

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Drawn De
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26. Document ID: US 5574934 A

L16: Entry 26 of 26

File: USPT

Nov 12, 1996

US-PAT-NO: 5574934

DOCUMENT-IDENTIFIER: US 5574934 A

TITLE: Preemptive priority-based transmission of signals using virtual channels

Full

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